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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re:	Patent Application for Mario Carlone	**Dated:**	Feb 18, 2003
Serial No.:	09/811,048	**Art Unit:**	1638
Filed:	March 15, 2001	**Examiner:**	Ashwin D. Mehta
For:	Inbred Corn Line G3601	**Action:**	Amendment

To: The Commissioner of Patents and Trademarks, Washington, DC 20231

EXAMINER'S PARAGRAPH 1

The Examiner in Paragraph 1 indicated that the Coe reference was not complete. This reference should be complete in numerous inbred line files. However, the reference is general and therefore is not believed to be relevant to the Examination of this application.

EXAMINER'S PARAGRAPH 2

The Examiner objected to claims 4,12,15,16 indicating that the use of –The—was correct. This amendment has been made.

EXAMINER'S PARAGRAPH 3 and 5

The Statement of deposit in the specification, because it does not include the deposit accession number and the Examiner indicates that the term G3601 is indefinite. Additionally, the Examiner objected to claims 1, 6, and 9 for failing to recite complete deposit Accession Information. The applicant respectfully requests that the Examiner withhold these objections until there are allowable claims in this case. The deposit accession number will be provided later in the prosecution if the issue fee is to be paid. This information should overcome the Examiner's rejection.

The claim 4 has been amended to clarify that the protoplasts are formed from the cells in the tissue culture.

Claim 9 has been amended to reflect "the inbred plant G3601 seed of "...to clarify the deposited material is the inbred line.

Claims 10 and 11 have been amended to provide antecedent basis.

Claims 14 and 17 have been clarified by amendment.

Claim 18 has had the indefinite recitation removed and the claim now indicates that the last step is identification of the seed.

EXAMINER'S PARAGRAPH 4

The Examiner has rejected under 35 USC§ 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), had possession of the claimed invention. The claimed invention allegedly lacks written description under current written description guidelines.

The claims are drawn to hybrid corn seeds/plants or F1 generation plants produced from crossing two inbred parent corn plants, wherein the identity of only one of the inbred parent plant is know, the other is unknown.

The PTO in its response to the comments concerning the new guidelines on written description noted, " Eli Lilly identified a set of circumstances in which the words of the claim did not, without more, adequately convey to others that applicants had possession of what they claimed. When the name of a novel chemical compound does not convey

sufficient structural information about the compound to identify the compound, merely reciting the name is not enough to show that the inventor had possession of the compound at the time the name was written."
This is not the case here. The biological material that is G3601 is to be deposited. The ordinarily skilled person in the art knows how to identify the basic genetic footprint of G3601 in a pedigree plant.

Additionally there is a **presumption that the requirement is complied with.** The Guidelines indicate that there is a **`strong presumption'** that an adequate written description of the claimed invention is present when the application is filed, consistent with In re Wertheim, 541 F.2d 257, 263,191 USPQ 90, 97 (CCPA 1976) (`we are of the opinion that the PTO has the initial burden of presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims.').

The PTO supports that in most cases, the statement that **`an originally filed claim is its own written description,'** is borne out because the claim language conveys to others of skill in the art that the applicant was **`in possession'** of what is claimed. In this case the originally filed claim is its own written description and the specification itself shows abundant evidence that the applicant was in possession of the invention. Table 4 shows the line G3601 in 30 different hybrid combinations. If you presume that there was only one hybrid plant in each of these trials (there of course were many, many more hybrid plants and repetitions) and that each of these individual 30 hybrids produced only one cob. And if you further assume that each of those cobs only produced 500 kernels then Table four indicates that at the time of the invention the applicant possessed at least 15,000 hybrid seeds according to the claims and at least 15,000 seeds having an ancestor of G3601.

The Examiner's rejection does not indicate any appreciation for the skill level of the ordinarily skilled person in the art. The skilled person is a plant breeder. Plant breeders are usually skilled to the level of PhD. A plant breeder spends a lifetime developing

plants and tracking the plants' pedigrees. The basic premise of a breeder is that by following the ancestry of breeding and by analyzing the prog ny, he can make improvements in the alleles that are in the future germplasm. Thus by definition a plant breeder clearly is aware of the pedigree of a plant. Additionally, with modern genetic techniques in use in plant breeding, the ancestry of a plant can be traced for generations in a manner similar to the human testing for paternity or relatedness of persons.

Second the rejection does not accept that the actual reduction to practice is shown in Table 4. The specification data inescapably leads to the conclusion that the inventors were in possession of numerous examples, at least 30 million examples, of the claimed invention at the time of filing. Additionally, the methods for tracking pedigrees and thus ancestors is undeniably deeply ingrained in the breeding process of plant breeders that are skilled in the art. Methods for detecting the genetic carry over were well known in the art as of filing and was publicly available process, as shown in Quantitative Genetics in Maize Breeding, 2nd Ed., Chapter 5, page 116, Hallauer and Miranda, ISU Press/Ames (1988) that shows that a number of maize traits are very inheritable (see page 118). This general inheritability of traits and the ability to employing markers to detect the genetic movement of the material of the invention through the descendent lines has been in use by the ordinarily skilled person in the art since at least the late eighties.

Methods for tracking pedigrees and thus ancestors determining the carry over into these descendents, of the genetic traits and characteristics of an ancestor through marker assisted breeding is also well known by those of skill in the art. The book entitled Genetics and Analysis of Quantitative Traits published by Sinauer Associates, Inc. and written by M. Lynch and B Walsh, pages 390-393 of Chapter 14 (1998), lists a number of molecular markers and the genetic material that these markers are detecting. These marker techniques are well known and are used in the maize industry. These biological techniques can be employed by the person of ordinarily skill in the art to measure DNA variation in plants. The oldest method was allozymes, which is being replaced by one of the simplest marker approaches, which is a method that uses RFLP's. Numerous

other marker approaches are which are in standard use in the maize industry are also listed in this publication.

The guidelines clearly state that for the written description the, "Possession may be shown in a variety of ways including description of an actual reduction to practice" In the present application the actual reduction to practice is shown in 26 different crosses.

Additionally the Examiner's position that somehow a breeder is not conveyed by the specification this inbred with a transgene or a mutation is again ignore the skill of the ordinary plant breeder. Nature has been developing plant traits for 10,000 of thousands of years. Man has since the time of the planter, gatherer been selecting for the best traits shown in the seeds for the environment that the seed is grown in. Mutations have been selected for and moved in and through germplasm by breeders for years. Corn mutations include traits such as corn seed color (white, yellow, blue etc.) sugar content (sweet corn is a corn mutation), starch content and the like. Breeders have been moving traits much more difficult then mutations or transgenes for literally thousand of years into new and better germplasm. Breeders move multi-gene traits such as yield and moisture content at harvest into new lines. Traits such as lodging and emergence and timing of flowering is the heart and soul of what plant breeding does and is designed to do. To indicate that person trained to identify multi allelic traits and move these into new germplasm have not understood how to move mutations and transgenes is simply ignoring the facts of reality. The Patent Examiner should not ignore the skill. If affidavits concerning the understanding of the ordinarily skilled person would be helpful in this matter the Applicant will provide such upon the Examiner's request.

CLAIMS REJECTIONS- 35 USC §102/103

The applicant believes that the Examiner rejection is inappropriate. The claimed invention in claims 1-14 and 18 require that G3601 be in the pedigree of the descendents and the invention underlying U.S. 5,880,342 does not suggest lines that have G3601 as an ancestor. In fact the line underlying U.S. 5,880,342 teaches the production of descendents from the 17DIA1 and not breeding with G3601. Clearly, 17DIA1 differs from G3601 and its descendents in that it has no G3601. 17DIA1

teaches breeding with 17DIA1, which has very different electrophoresis results on th genetic sid of the equation compared to G3601. Table 9 shows that th 17DIA1 and G3601 differ.
However, in the table at the top of column 7 it indicates that the anther color of 17DIA1 is pink where the anther color of G3601 is purple. Also this table indicates that the brace root color of 17DIA1 is red where the brace root color of G3601 is purple. The two lines differ visually in the glume color also as the color of 17DIA1 is green where the glume color of G3601 is purple. The cob color of 17DIA1 is red and the G3601 is white. Thus in fundmental visual ways the two inventions differ.

Additionally, the area of adaptation of the two lines is very different. 17DIA1 is adapted to regions with 89 day seasons where G3601 is adapted for 111 day seasons. The present invention is a later flowering and maturing inbred than is 17DIA1.

The two lines are both maize elite inbreds but other than those similarity the two lines are very different from each other and thus 17DIA1 should not be novelty destroying nor should 17DIA1 be the basis for an obviousness rejection. However, even if these two inbreds were more similar the claims still would not suggest nor taught by the patent on 17DIA1. The claims claim line G3601 in hybrid combination and as an ancestor. 17DIA1 teaches breeding with an entirely different composition of matter, an inbred with very different traits. Additionally there is no likelihood that someone breeding with 17DIA1 would achieve the invention claimed in these claims as these claims all require the use of G3601. The patent to 17DIA1 does not teach nor suggest G3601 as a breeding tool. The Fromm paper does not add to the obviousness, as there is no teaching of G3601 in the Fromm paper. Thus the Examiner is respectfully requested to reconsider this rejection and if deemed appropriate to please remove this rejection to the listed claims under 102/103.

Respectfully submitted,

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CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8

I hereby certify that the foregoing Amendment with both an unmarked and marked set of claims and an extension of time and postcard are being mailed to the Assistant Commissioner of Patents and Trademarks, Washington, DC 20231, on Feb 18, 2003.

S/N: 09/811,048

Our Reference No. G3601

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